In 1873 I saw with Dr. W. C. N. Randolph a case of hepatic trouble the nature of which was very obscure. At one time we inclined to the belief that there was "biliary lithiasis," and administered the choleate of soda; its use was not attended by any benefit, however, and we subsequently came to the conclusion that the trouble was of a different nature.

The third and last case which I shall mention was under the care of another practitioner. The patient is a clergyman of *great ability, a very hard* student, and whose mind is frequently overtaxed. When he is engaged merely in the duties of his own parish, he has usually but little trouble; his digestion is good. But when he taxes his mind severely, which he is frequently compelled to do on account of the position he holds in the church and the duties incident thereto, he invariably suffers from severe headache, and, at the same time, hepatic troubles, which have frequently culminated in an attack of gall-stone colic. His physician advised the use of choleate of soda, which he has now been using at intervals for some months, with, I am told, decided benefit. The headache and feeling of lassitude and depression have, it is true, been *only partially* removed, but there has been *no return* of the hepatic trouble. It would seem highly probable that the headache, etc., were caused, in this case, *partly* by the nervous waste *per se*, and it is not to be expected that *this* would be relieved by the medicine, which seems to act only by aiding in the removal of an excrementitious principle.

I have restricted myself, in the present article, to the consideration of the choleate of soda as a remedy in biliary lithiasis; but it is not improbable, and indeed the result in one of my cases makes it *highly* probable, that its use might be beneficial in some cases of enfeebled digestion, when the bile seemed to be at fault. I shall try it in these cases, and trust that others will do so and give the result of their observations to the profession. The cheapness of the article renders it accessible to all classes of patients.

ART. XII.—*Treatment of Wounds; Union by First Intention.*

By A. P. KNOWLTON, M.D., of Olmstead Falls, Ohio.

IN the great majority of wounds primary union is desirable, but there is a diversity of opinion in regard to the treatment of wounds for this purpose. When the danger of purulent infection, putrid infection, phlebitis, angeioleucitis, osteomyelitis, and secondary hemorrhage are considered, the desirableness of immediate union must be acknowledged. The method of treatment which will secure this in the greatest number of cases is worthy of our careful consideration. This has received the careful attention of many prominent surgeons, among whom are Drs. Batailhe, M. Abeille, M. Maisonneuve, Nélaton, Bourgade, and Humphrey. Dr. Humphrey truly says: "That the greatest requisite—the *sine qua non*—for the immediate union of wounds, is, obviously, adaptation of the cut surfaces—unless these are placed in apposition they cannot easily unite." In 1852, Dr. Bataille published a pamphlet recommending the use of alcohol to the surfaces of wounds. In this he followed some of the most ancient surgeons. Prof. Nélaton was led by Dr. Bataille's publication to try alcoholic dressings, and was satisfied with the result. Soon after this M. Maisonneuve tried a solution of carbolic acid, and Dr. Demarquay about this time strongly recommended glycerine. Each of these remedies had its advocates, and some surgeons combined them all. In 1867, Dr. Abeille published a memoir; the method which he recommended places wounds in an analogous condition to those which undergo immediate organization in the subcutaneous method. "This method consists in uniting as closely as possible the lips of the wounds so as to bring similar tissues into contact, after cleaning of all blood, discharges, or other foreign matters, removing the dressings as seldom as possible—keeping up a continuous or intermittent imbibition of cold water, according to the patient's sensations." In 1867, Prof. Bourgade read an interesting paper before the International Medical Congress, held at Paris, in which he stated that he had for five years, prior to that time, employed perchloride of iron in the dressing of wounds made by the knife in surgical operations.

> "As soon as the surgeon has completed his operation, applied ligatures, cleaned the wound, and completely arrested the flow of blood, he covers the whole of the cut surfaces with charpie saturated with a solution of perchloride of iron, taking care to subject all the divided tissues, bone, vessels, nerves, muscles, etc., to the action of this liquid. . . . . The perchloride of iron combines closely with the tissues and forms a thick, firm, and adherent covering, which acts as a kind of protective cuirass to the divided parts, and defends them for six or eight days, or even longer, from the action of all external agents."

Since the publication of the above paper I have employed the perchloride of iron to wounds made by the knife in surgical operations, and also to accidental wounds, and, in a large number of cases, it has fulfilled my most sanguine expectations. In the treatment of wounds where union by first intention is desirable, all surgeons agree that perfect adaptation of the cut surfaces is of great importance. Dr. Humphrey says: "The want of union in a wound is commonly proportionate to the want of apposition of the surfaces, and one great object of the treatment must be, to secure as exact an apposition of the cut surfaces as possible, and to reduce to the minimum all substances, blood, dressings, ligatures, etc., that may intervene between them, and keep them apart." In small superficial wounds, there is but little difficulty in securing apposition, but in large, deep wounds it is more difficult. For the past six years I have used principally the silver pin, or harelip suture, in large wounds, and have found it to be the surest means of maintaining perfect apposition of the cut surfaces. The size of the pin should be proportionate to the size of the wound, and the amount of strength necessary to hold the lips of the wound in apposition. It seems to me possible in many cases to convert a compound fracture into a simple fracture. Let the wound be thoroughly cleaned, all hemorrhage arrested, then apply to the whole surface of the wound a solution of perchloride of iron, bring the lips of the wound into perfect apposition, secure them with the silver pin suture, apply a perfectly immovable apparatus for the fractured bone, administer anodynes in doses sufficient to relieve pain and secure quiet, comfort, and sleep. Let the dressings be as infrequent as possible, and if a compound fracture can be converted into a simple fracture the surgeon will feel rewarded for his efforts. We do not claim to originate a new method of treating wounds. The silver pin suture has been used more or less by surgeons, but I have wondered why it has not been used more extensively. After the first dressing with the perchloride of iron we are in the habit of using dilute alcohol with a solution of carbolic acid for subsequent dressings—of late we use the salicylic acid in place of carbolic acid. The following cases, together with many more, were treated according to the method indicated above.

CASE I. Was called, Dec. 5, 1872, to see a lad aged eleven years, who had received a severe wound of the knee. The boy was in the forest with his father, where the latter was chopping wood. The boy had climbed a sapling close by; the sapling bent over and the boy slipped and fell, coming down in front of the father just as he was bringing down his axe; the axe struck the left knee of the boy, severing the patella, cutting down on the outside of the knee-joint, penetrating the joint; with a cut through the synovial membrane about one inch long. After arresting the hemorrhage and brushing over the cut surfaces with a solution of perchloride of iron, they were carefully placed in apposition, and secured with silver pin sutures. A figure-of-eight bandage was applied to hold the fragments of the patella in apposition; a long splint was then applied from the axilla down to about six inches below the foot. An inside splint reaching from the lower part of the upper third of the thigh to six inches below the foot; cross-piece below the foot, another one just below the knee, and one just above; a rack was framed around the joint, leaving a chamber from integument to the inside of the rack about one inch in diameter; and this rack was covered with relayers of ice-bags. The boy was ordered a one-grain opium pill every four hours. Gentle extension, and counter-extension was kept up. This treatment was continued for eight days, when the ice-bags were discontinued, and the wound dressed with dilute alcohol and carbolic acid. Primary union had been obtained. At the end of three weeks, the splint was removed each day, and passive motion practised. The lad made a good recovery, and now has complete use of the leg, with perfect motion of the knee-joint.

CASE II. Feb. 25, 1874, I was called to amputate the leg of one Welch, a middle-aged man. There was an extensive ulcer, involving both bones of the leg, and of fifteen years' standing. The patient was nearly blanched from repeated hemorrhages. Before applying the tourniquet, the leg was elevated, the superficial vessels were emptied by rubbing the leg upward. The tourniquet was applied to the popliteal artery, and the leg amputated below the knee. It was almost a bloodless operation. After ligating the arteries and arresting all capillary bleeding, a strong solution of perchloride of iron was applied over the whole cut surfaces. The flaps were carefully placed in apposition, and united with silver pins. The dressings (very light) were kept moistened with dilute alcohol and carbolic acid. In this case a plastic union was obtained of the whole flaps, except about one-half inch at the inside angle, where the ligatures protruded. The ligatures came away on the tenth day. The patient walked across the floor with a peg, unaided by a crutch, in six weeks from date of operation.

June 26, 1872, I was called to see a man, employed by L. L. & M. S. R. R., who had been run over by a hand-car. There were extensive integumental wounds of the scalp, face, and right knee. The wound of the knee was triangular, extending across the knee-joint anteriorly, about five inches in length, and down the outside of the leg about six inches in length. There was a triangular flap turned down, but the knee-joint was not perforated. After cleaning these wounds the cut surfaces were brushed over with a strong solution of perchloride of iron, and then secured in apposition with silver pin sutures. Union by first intention was the result in all the wounds.

These are some of many cases that might be reported, showing the successful result of this method of treating wounds, whether inflicted with the surgeon's knife or by accident.

ART. XIII.—*On the Use of Nélaton's Catheter in Stricture of the Urethra, enlarged Prostate, etc.* By T. C. WALLACE, M.D., of Cambridge, New York.

FOR the benefit of my professional brethren who are often sorely puzzled, and who sometimes find it impossible to introduce the catheter, by reason of stricture of the urethra, enlargement of the prostate, or perhaps from a swollen and bruised state of the parts, caused by too vigorous use of instruments, I desire to report the invariable success which has thus far attended the use of the India-rubber catheter in my hands.

Nearly two years ago I was in attendance upon an elderly gentleman who required daily catheterization. Each introduction of the instrument was provoking increased suffering and becoming more difficult of accomplishment, and I was convinced the time was not far distant when it would be found impossible to enter the bladder with any ordinary catheter. I procured one of Squire's prostatic catheters, which at first seemed an improvement on the silver and gum-elastic ones previously used, but after a few times using I could not introduce it as readily as I could a silver one. My attention was then called to the India-rubber instrument, and I procured a Nélaton's soft gum catheter. When I got it, it seemed to me utterly improbable (and well nigh impossible) that an instrument possessing so little firmness, and so entirely limp, would ever pass through the urethra and enter the bladder. However, I was most agreeably disap-